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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/913,405 | 10/18/2001 | Hideyuki Takai | 1776-4067 | 9536 |

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EXAMINER

FEELY, MICHAEL J

ART UNIT

PAPER NUMBER

1712

DATE MAILED: 02/03/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

53

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/913,405 | TAKAI ET AL. | |
| | Examiner | Art Unit | |
| | Michael J Feely | 1712 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 16, 17, 23-25, 29, 30 and 35-37 is/are rejected.
- 7) ☒ Claim(s) 4-15, 18-22, 26-28, 31-34 and 38-42 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☒ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>6</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of the following papers submitted under 35 U.S.C. 119(a)-(d), which have been placed of record in the file: JP-11/359369, JP-11/359343, JP-11/359307, and JP-11/359235. It is noted, however, that applicant has not filed a certified copy of JP-11/359391, as required by 35 U.S.C. 119(b).

Claim Objections

2. Claims 4-15, 19-22, 26-28, 31-34 and 38-42 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 4-15, 19-22, 26-28, 31-34 and 38-42 have not been further treated on the merits.

3. Claim 6, 7, 9, and 10 are objected to because of the following informalities: These claims contain multiple periods. There should only be one period at the end of each claim. Appropriate correction is required.

Claim Language Suggestions

4. Claim 2 recites, "wherein said epoxy compound (i-1) has 1-2 pieces of epoxy groups in the molecule, and at least one piece of said epoxy groups is a cycloaliphatic epoxy group." Claim 24 recites, "1-2 pieces of epoxy groups in the molecule." Claim 37 recites, "wherein said epoxy compound (v-1) has one 1-4 pieces of epoxy groups in the molecule, and at least one piece of said epoxy groups is a cycloaliphatic epoxy group."

The phrase "pieces of epoxy groups" could be interpreted to mean that the epoxy groups are partial groups or residues of reacted groups. Based on the specification, it appears that

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“pieces of epoxy groups” would be better described by --epoxy groups per molecule--. Proposed changes are:

(2) A curable resin composition as claimed in claim 1, wherein said epoxy compound (i-1) has 1-2 epoxy groups per molecule, and at least one of said epoxy groups is a cycloaliphatic epoxy group.

(24) A resin composition for insulating a laminated printed circuit board as claimed in claim 23, wherein said monomer (iii-1) has viscosity of not more than 1000 cP/25°C and 1-2 epoxy groups per molecule, and at least one of said epoxy groups is a cycloaliphatic epoxy group.

(37) A curable resin composition as claimed in claim 35 or 36, wherein said epoxy compound (v-1) has 1-4 epoxy groups per molecule, and at least one of said epoxy groups is a cycloaliphatic epoxy group.

5. Claims 35 and 36 recite, “an oxetane compound having 1-6 pieces of oxetane rings in one molecule.”

The phrase “pieces of oxetane rings” could be interpreted to mean that the oxetane groups are partial groups or residues of reacted groups. Based on the specification, it appears that “pieces of oxetane groups” would be better described by --oxetane groups per molecule--.

Proposed changes are:

(35) A curable resin composition which comprises (v-1) an epoxy compound having ionic polymerizability and viscosity of not more than 1,000 cP at 25°C, (v-4) an oxetane compound having 1-6 oxetane groups per molecule, and (3) a thermally-activating ionic polymerization catalyst which can dissolve by heating and crystallize by cooling.

(36) A curable resin composition which comprises (v-1) an epoxy compound having ionic polymerizability and viscosity of not more than 1,000 cP at 25°C, (v-2) an acrylic resin having a functional group of ionic polymerizability, (v-4) an oxetane compound having 1-6 oxetane groups per molecule, and (3) a thermally-activating ionic polymerization catalyst which can dissolve by heating and crystallize by cooling.

6. Claim 15 recites, "A coated article which comprises coating a curable resin composition as claimed in any one of claims 1-12 on a substrate and cured." The article is described by process limitations. The claim would be more accurately worded as:

(15) A coated article comprising a substrate and a coating on said substrate, wherein said coating is formed from curing the curable resin composition set forth in any of claims 1-12.

7. Claim 18 recites, "wherein said epoxy compound (ii-1) further contains at least one kind selected from a bisphenol-type epoxy resin, a novolak-type epoxy resin, and a brominated-type epoxy resin." Based on lines 25-27 of page 29 of the specification, the claim limitation would be more accurately worded as:

(18) A solvent-based coating composition as claimed in claim 16 or 17, wherein said epoxy compound (ii-1) is mixed with an additional epoxy selected from the group consisting of a bisphenol-type epoxy compound, a novolak-type epoxy compound, and a brominated-type epoxy compound thereof.

8. Claim 22 recites, "A coated article which comprises coating a solvent-based coating composition as claimed in claims 16-20 onto a substrate, and curing. The article is described by process limitations. The claim would be more accurately worded as:

(22) A coated article comprising a substrate and a coating on said substrate, wherein said coating is formed from curing the curable resin composition set forth in any of claims 16-20.

9. Claim 32 recites, "A protecting layer for a color filter which comprises coating a curable resin composition as claimed in any one of claims 29-31 onto a substrate, and curing. The article is described by process limitations. The claim would be more accurately worded as:

(32) A protecting layer for a color filter comprising a coating formed from curing the curable resin composition set forth in any of claims 29-31, wherein said protecting layer is deposited on a substrate.

10. Claim 38 recites, "wherein said epoxy compound (v-1) further contains at least one kind selected from a bisphenol-type epoxy resin, a novolak-type epoxy resin, and a brominated-type epoxy resin." Based on lines 15-18 of page 107 of the specification, the claim limitation would be more accurately worded as:

(38) A curable resin composition as claimed in any one of claims 35-37, wherein said epoxy compound (v-1) is mixed with an additional epoxy selected from the group consisting of a bisphenol-type epoxy compound, a novolak-type epoxy compound, and a brominated-type epoxy compound thereof.

11. Claim 42 recites, "A coated article which comprises coating a solvent-based coating composition as claimed in claims 35-40 onto a substrate, and curing. The article is described by process limitations. The claim would be more accurately worded as:

(42) A coated article comprising a substrate and a coating on said substrate, wherein said coating is formed from curing the curable resin composition set forth in any of claims 35-40.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language;

or

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

13. Claims 1-3, 16-17, 23-25, 29-30, and 35-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Ikushima et al. (US Pat. No. 6,015,848).

Regarding claims 1-3, Ikushima et al. disclose a curable resin composition (column 2, lines 50-67) which comprises (i-1) an epoxy compound having an ionic polymerizability (column 2, lines 55-57) and viscosity of not more than 1,000 cP at 25°C (column 3, lines 1-29; column 37, lines 22-55); (i-2) an acrylic resin having an ionic polymerizable functional group (column 2, lines 58-61); and (3) a thermally activating ionic polymerization catalyst (column 2,

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lines 62-65) which can be dissolved by heating and crystallized by cooling (column 6, lines 44-57; column 7, lines 4-11 and 15-20); wherein said epoxy compound (i-1) has 1-2 epoxy groups per molecule and at least one epoxy group is a cycloaliphatic epoxy group (column 3, lines 1-29; column 37, lines 22-55); and wherein said acrylic resin (i-2) has hydroxyl group and, glycidyl group and/or cycloaliphatic epoxy group (column 3, line 30 through column 4, line 31).

Regarding claims 16 and 17, Ikushima et al. disclose a solvent-based coating composition (column 2, lines 50-67) which comprises (ii-1) an epoxy compound having at least two cycloaliphatic epoxy groups in the molecule and a number average molecular weight of not more than 2,000 (column 2, lines 55-57; column 3, lines 15-29); (ii-2) an acrylic resin containing an epoxy group and having a number average molecular weight of 2,000-50,000, a hydroxyl group value of 10-250 mgKOH/g, and an epoxy equivalent of not more than 300 (column 2, lines 58-61), and (3) a thermally activating ionic polymerization catalyst (column 2, lines 62-65) which can be dissolved by heating and crystallized by cooling (column 6, lines 44-57; column 7, lines 4-11 and 15-20); wherein said epoxy group in said acrylic resin (ii-2) containing an epoxy group is a cycloaliphatic epoxy group or an epoxy group derived from glycidylmethacrylate (column 4, lines 3-31).

Regarding claims 23-25, Ikushima et al. disclose a resin composition which comprises (iii-1) a monomer having at least one functional group having ionic polymerizability (column 2, lines 55-57; column 3, lines 1-14); (iii-2) a polymeric compound having at least one functional group having ionic polymerizability (column 2, lines 58-61); and (3) a thermally activating ionic polymerization catalyst (column 2, lines 62-65) which can be dissolved by heating and crystallized by cooling (column 6, lines 44-57; column 7, lines 4-11 and 15-20); wherein said

monomer (iii-1) has a viscosity of not more than 1,000 cP at 25°C (column 3, lines 1-29; column 37, lines 22-55) and 1-2 epoxy groups per molecule (column 3, lines 1-29), and at least one of said epoxy groups is a cycloaliphatic group (column 3, lines 1-29); and wherein said polymeric compound (iii-2) has a cycloaliphatic epoxy group (column 3, line 30 through column 4, line 16).

The preamble of claims 23-25 includes the language, “for insulating a laminated printed circuit board.” It has been found that, “where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention, the preamble is not a claim limitation,” – *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999) and *Rowe v. Dror*, 112 F.3d 473, 478 42 USPQ2d 1550, 1553 (Fed. Cir. 1997). Hence, the preamble has not been given patentable weight in claims 23-25.

Regarding claims 29 and 30, Ikushima et al. disclose a curable resin composition which comprises (iv-1) an epoxy resin having ionic polymerizability (column 2, lines 55-57) and (3) a thermally activating ionic polymerization catalyst (column 2, lines 62-65) which can be dissolved by heating and crystallized by cooling (column 6, lines 44-57; column 7, lines 4-11 and 15-20); wherein said epoxy resin (iv-1) is a polyfunctional epoxy resin and at least one of said epoxy groups is a cycloaliphatic epoxy group (column 3, lines 1-29).

Regarding claim 35, Ikushima et al. disclose a curable resin composition which comprises (v-1) an epoxy compound having ionic polymerizability (column 2, lines 5-57) and viscosity of not more than 1,000 cP at 25°C (column 3, lines 1-29; column 37, lines 22-55); (v-4) an oxetane compound having 1-6 oxetane rings per molecule (column 29, lines 7-12; column 30, line 28 through column 31, line 19), and (3) a thermally activating ionic polymerization catalyst

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(column 2, lines 62-65) which can be dissolved by heating and crystallized by cooling (column 6, lines 44-57; column 7, lines 4-11 and 15-20).

Regarding claims 36-37, Ikushima et al. disclose a curable resin composition which comprises (v-1) an epoxy compound having ionic polymerizability (column 2, lines 5-57) and viscosity of not more than 1,000 cP at 25°C (column 3, lines 1-29; column 37, lines 22-55); (v-2) an acrylic resin having a functional group of ionic polymerizability (column 2, lines 58-61; column 29, lines 7-12; column 30, line 28 through column 31, line 19); (v-4) an oxetane compound having 1-6 oxetane rings per molecule (column 29, lines 7-12; column 30, line 28 through column 31, line 19); and (3) a thermally activating ionic polymerization catalyst (column 2, lines 62-65) which can be dissolved by heating and crystallized by cooling (column 6, lines 44-57; column 7, lines 4-11 and 15-20); wherein said epoxy compound (v-1) has 1-4 epoxy groups per molecule, and at least one of said epoxy groups is a cycloaliphatic epoxy group (column 3, lines 1-29).

Regarding all of the above claims, Ikushima et al. do not explicitly disclose the viscosity range of the epoxy component and the solubility of the catalyst component. However, the epoxy resins and catalysts taught by Ikushima et al. are set forth in the disclosure of the instant invention, wherein they are cited to meet the claimed properties. The epoxy resins are described on page 28, line 3 through page 29, line 3 of the Specification, and the catalysts are described on page 35, line 13 through page 37, line 2 of the Specification. Therefore, the epoxy component and the catalyst component of Ikushima et al. would have met the claimed limitations because a chemical and its properties are inseparable.

Allowable Subject Matter

14. Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 18, Ikushima et al. fail to teach or suggest the solvent-based coating of claim 16 or 17, wherein the epoxy compound (ii-1) is mixed with an additional epoxy selected from the group consisting of a bisphenol-type epoxy compound, a novolak-type epoxy compound, and a brominated-type epoxy compound thereof. Ikushima et al. only teach the use of a single epoxy compound and are silent regarding the use or addition of a bisphenol-epoxy, a novolak-epoxy, or a brominated-epoxy.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J Feely whose telephone number is 703-305-0268. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson can be reached on 703-308-2340. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

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Michael J. Feely
January 31, 2003

A handwritten signature in black ink, reading "Robert A. Dawson". The signature is fluid and cursive, with the first name "Robert" being more prominent than the last name "Dawson".

Robert Dawson
Supervisory Patent Examiner
Technology Center 1700